

Preoperative Biliary Drainage: PTBD vs ENBD/ERBD

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With aggressive surgery like as major hepatectomy with hilar bile duct resection, the survival outcome of hilar cholangiocarcinoma has markedly increased. However, major liver resection has relative high operative mortality and morbidity in jaundiced patients. Preoperative biliary drainage has been widely used to improve short-term operative results by reversing pathophysiologic changes in patients with jaundice. In spite of increasing risk of catheter related complication and infection, preoperative biliary drainage could increase cholestatic liver tolerance to ischemia and volume reduction by hepatectomy and reduce blood loss with control of preoperative cholangitis.

Preoperative biliary drainage can be accomplished either externally through percutaneous transhepatic biliary drainage (PTBD) or internally through endoscopic naso-biliary drainage (ENBD) or endoscopic retrograde biliary drainage (ERBD). PTBD makes preoperative cholangiography possible and it can be left in place after an operation. It also makes postoperative decompression and cholangiography possible. However, cholangitis, bile peritonitis due to bile leakage, bleeding, pain at insertion site, body fluid loss with electrolyte imbalance are also possible. Recently, the risk of peritoneal seeding (0.6~6%) has been raised for PTBD.

On the other hand, endoscopic biliary drainage (ENBD/ERBD) has been experimentally shown to have

beneficial effects on restoring nutritional status and immune function and reducing endotoxemia. However, reflux of duodenal contents may result in reflux cholangitis. Long term indwelling of ENBD is impossible due to discomfort of nose and throat. Moreover, several procedure related complications are well known like as duodenal perforation, bleeding, severe pancreatitis, which make curative resection impossible after endoscopic biliary drainage.

Both biliary drainages methods have definite merits and demerits. However, there was no high quality randomized prospective study proving the superiority of one biliary drainage method.

Considering cost effectiveness and patient's comfortability, in the case requiring only one short-term biliary drainage, ENBD could be recommended for hilar cholangiocarcinoma. However, PTBD is a gold standard for those with multiple separated bile ducts by tumor and requiring relative longterm indwelling catheter as a preoperative biliary drainage. Selecting the methods of biliary drainage, we also consider each hospital's facility and experience to perform biliary drainage.

In this lecture, I will talk about clinical considerations selecting the preoperative drainage for hilar cholangiocarcinoma comparing PTBD and ENBD/ERBD.